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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,439	08/27/2003	Uma Arun	GP-303940 (2760/126)	5178
<div>7590 08/28/2007 ANTHONY LUKE SIMON General Motors Corporation, Legal Staff Mail Code 482-C23-B21, 300 Renaissance Center P.O. Box 300 Detroit, MI 48265-3000</div>			<div>EXAMINER LENNOX, NATALIE</div>	
			<div>ART UNIT 2626</div>	<div>PAPER NUMBER</div>
			<div>MAIL DATE 08/28/2007</div>	<div>DELIVERY MODE PAPER</div>

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/649,439	ARUN, UMA	
	<b>Examiner</b>	<b>Art Unit</b>	
	Natalie Lennox	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on June 7, 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This Office Action has been issued in response to the amendments filed on June 7, 2007. Claims 1-25 are pending with claims 1-5 and 7-20 amended, and claims 21-25 new.

#### ***Drawings***

1. The drawings were received on June 7, 2007. These drawings are acceptable.

#### ***Response to Arguments***

2. Applicant's arguments, see pages 8-11, filed on June 7, 2007, with respect to claims 8-14 have been fully considered and are persuasive. The 35 U.S.C. 101 rejection of claims 8-14 has been withdrawn.

3. Applicant's arguments regarding claims 1-5, 8-12, and 15-19 filed on June 7, 2007 have been fully considered but they are not persuasive.

With regard to claims 1, 8, and 15, applicant argues that "Suominen only discloses speech recognition activation which does not equal speech recognition adjustment" and goes on further saying that "adjustment relates to a degree to which already-activated speech recognition is performed." Examiner disagrees with applicant because it is well known in the art that a speech recognition system is capable of being adjusted while offline (not active) as well as online (active). Suominen's activation signal may be changed whenever a change in the activation is desired, wherein the adjustment is provided by the desired

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change. Therefore, Suominen does teach adjusting the system as presented in the claims. Further, applicant argues that Suominen does not disclose or teach the adjustment of speech recognition activation to allow for earlier detection of user speech input. However, the limitation "to allow for earlier detection of user speech input" is merely an intended use for the system. Furthermore, applicant argues that Suominen teaches away from applicant's invention claiming that Suominen teaches a position –based activation system, rather than a speech-based adjustment system. Examiner disagrees with applicant because both systems are speech recognition systems where an adjustment to the activation signal may be provided as desired or necessitated.

With regard to claims 6, 7, 13, 14, and 20, applicant argues that Dudemaine discloses removing unwanted background noise, whereas the applicant claimed filtering sound overlays that result from a voice command. Further, applicant argues that "one cannot simply equate background noise with sound overlay" and that "background noise is unpredictable, has great variety and is unexpected." Examiner disagrees with applicant because background noise is anything not wanted in a signal. Even in applicant's own disclosure the sound overlay is referred to as a noise residue (Page 10, line 23). Methods for filtering noise from signals are well known in the art. Applicant also argues that Dudemaine discloses removing silence, not sound, however examiner disagrees because Dudemaine teaches filtering unwanted background noise, as explained above.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-5, 8-12, and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over French-St. George et al. (US Patent 6,012,030) in view of Suominen (2003/0055655).

As per claims 1,8 and 15, French-St. George et al. teach a method, computer readable medium, and system for speech recognition that adjusts to premature enunciator commands, comprising:

activating the speech recognition system (Col. 9, lines 12-14, when speech recognition is enabled, the input mode is checked to determine whether the speech recognition is on);

receiving speech input from a user before the system is ready to receive speech input (as shown in Fig. 10 and described in Col. 10, lines 57-60, Fig. 10 sets out an example of an error recovery route for a time out failure because input was received to late or too early...); and

determining that the user has spoken prematurely (Fig. 10 shows the feature of "SPOKE TOO SOON" when the user's input is received before the listening period, also the fact that the user "spoke too soon" after the query "spoke too late" determines the user as a premature enunciator).

However, French-St. George et al. doesn't disclose adjusting the system after determining that the user has spoken prematurely to allow for earlier detection of user speech input. Suominen teaches adjusting the system after determining that

the user has spoken prematurely to allow for earlier detection of user speech input (Suominen's paragraph [0083], first lines, activation signal  $S_A$  that may be asserted, with appropriate coding, whenever a change in the activation of speech recognition is desired). It would have been obvious to use Suominen's feature of adjusting the activation signal for French-St. George et al.'s method, computer readable medium, and system for speech recognition because Suominen provides methods and systems for speech recognition that can be activated at any time.

As per claims 2, 9, and 16, French-St. George et al. in view of Suominen teach the method, computer readable medium and system for speech recognition according to claims 1, 8, and 15, wherein the speech recognition system is activated selectively by the user (French-St. George's Col. 6, lines 1-12, mobile telephone unit comprises body, display screen, touch sensitive buttons, conventional keypad, and a speaker associated with the speech interface to providing speech prompts for the various modes of interaction which may be selected by a user. Also in Col. 6, lines 24-26, for example the user may pick up the mobile phone, thus activating the unit, and turning on all default input/output modalities.).

As per claims 3, 10, and 17, French-St. George et al. in view of Suominen teach the method, computer readable medium and system for speech recognition according to claims 1, 8, and 15, wherein the activation of the speech recognition system is followed by informing the user that the system is ready to receive input and a listening period wherein the speech recognition system is able to receive

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speech input (French-St. George's Col. 1, lines 25-30, speech interface prompts the user when to speak by providing a speech prompt... After the prompt, a speech recognizer is turned on for a limited time window, during which time the user may respond.).

As per claim 4, French-St. George et al. in view of Suominen teach the method for speech recognition according to claim 1, further comprising the speech recognition system providing a prompt indicating that the system is ready to receive speech input, receiving the user speech input before the system has started a first listening period that begins after a delay following the prompt, and thereafter providing a subsequent prompt and starting a subsequent listening period at an earlier time relative to its prompt. (French-St. George's Col. 7, lines 56-58, Fig. 10 shows the feature of "SPOKE TOO SOON" when user's input is received before the listening period, which begins "AFTER the prompt;" this would be the first listening period. For the second listening period, French-St. George's Fig. 10 shows repeating the prompts when no speech was recognized, such as indicating the user to "repeat the request AFTER the Prompt" when the system determined the user to have spoken too soon. However, French-St. George's does not specifically mention starting a subsequent listening period at an earlier time relative to its prompt. Conversely, Suominen teaches starting a subsequent listening period at an earlier time relative to its prompt (Paragraph [0083], "activation signal may be asserted, with appropriate coding, whenever a change in the activation of speech recognition is desired"). It would have been obvious to one having ordinary skill in the art at the time the invention was made



to have used the feature of starting a subsequent listening period at an earlier time relative to its prompt as taught by Suominen for French-St. George's method because Suominen's signal may be changed (adjusted) to start at an earlier time interval in order to provide a better recognition.

As per claims 11, and 18 French-St. George et al. in view of Suominen teach the computer readable medium and system for speech recognition according to claims 8 and 15, further comprising the speech recognition system to start a listening period at an earlier predetermined time interval (Suominen teaches starting a subsequent listening period at an earlier time relative to its prompt (Paragraph [0083], "activation signal may be asserted, with appropriate coding, whenever a change in the activation of speech recognition is desired"). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of starting a subsequent listening period at an earlier time relative to its prompt as taught by Suominen for French-St. George's system because Suominen's signal may be changed (adjusted) to start at an earlier time interval in order to provide a better recognition.

As per claims 5, 12, and 19, French-St. George et al. in view of Suominen teach a method, computer readable medium and system for speech recognition according to claims 4, 11, and 18, wherein the earlier listening period begins 50 to 100 ms before the speech recognition system informs the user of its readiness to receive input (It would have been obvious to one having ordinary skill in the art at the time the invention was made to make a decision choice for an appropriate time frame for the earlier listening period).



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6. Claims 6, 7, 13, 14, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over French-St. George et al. (US Patent 6,012,030) in view of Suominen (US 2003/0055655) as applied to claims 1, 8, and 15 above, and further in view of Dudemaine et al. (US Patent 6,195,634).

As per claims 6, 13, and 20, French-St. George et al. in view of Suominen teach a method, computer readable medium and system for speech recognition according to claims 1, 8, and 15, but don't disclose the speech recognition system filtering sound overlays from user commands. However, Dudemaine et al. teaches a word endpoint detection algorithm that removes silence before, after, and in the middle of the speech signal, and filters out unwanted background noise in order to expedite the speech recognition stage (Col. 5, lines 41-46). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of this word endpoint detector algorithm for French-St. George et al.'s method, computer readable medium, and system for speech recognition as modified by Suominen because Dudemaine et al. provides an audio recognition process comprising a speech recognition process for identifying predetermined sound in an unknown input audio signal (Col. 2, lines 60-63).

As per claims 7 and 14, French-St. George et al. in view of Suominen and in further view of Dudemaine et al. teach the method and computer readable medium according to claims 6 and 8, further comprising processing filtered speech input through the speech recognition system (Dudemaine et al.'s Col. 5,

lines 43-47, algorithm removes silence before, after, and in the middle of the speech signal, and filters out unwanted background noise in order to expedite the speech recognition stage... Speech recognition is the fourth stage of the process.) It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of processing filtered speech input through the speech recognition system as taught by Dudemaine for French-St. George's system, as modified by Suominen because Dudemaine provides an audio recognition process for identifying predetermined sound in an unknown input audio signal (Col. 2, lines 60-63).

7. Claims 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over French-St. George et al. (US Patent 6,012,030) in view of Suominen (US 2003/0055655) and Dudemaine et al. (US Patent 6,195,634).

As per claim 21, French-St. George et al. teach a method of using a speech recognition system to adjust to commands of premature enunciators, the method comprising:

- (a) activating a speech recognition system (Col. 6, lines 24-31);
- (b) indicating to the user that the system is ready to receive speech input (Col. 7, lines 56-58);
- (c) listening for speech input after a predetermined time delay (Fig. 10's "SPOKE TOO LATE" and "SPOKE TOO SOON" modules indicate that there is a short time delay for inputting speech after the prompt.);

(d) recognizing that the user has spoken before the system was ready to receive the speech input (Fig. 10's "SPOKE TOO SOON"); and thereafter

(e) indicating to the user via a prompt that the system is again ready to receive speech input (Fig. 10's "SPOKE TOO SOON" prompts the user to "repeat the request after the prompt"); and

(g) receiving the speech input (Fig. 7 demonstrates that after the system has determined that the speech input was not valid, if the system has not timed out, it returns to receiving the input).

However, French-St. George et al. does not specifically mention the method comprising:

(f) starting a listening period before the prompt is complete;

(h) filtering the received speech input to remove noise residue due to the prompt.

Conversely, Suominen teaches starting a listening period before the prompt is complete (Paragraph [0083], "activation signal may be asserted, with appropriate coding, whenever a change in the activation of speech recognition is desired"). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of starting a listening period before the prompt is completed as taught by Suominen for French-St. George's method because Suominen's signal may be changed (adjusted) to start at an earlier time interval in order to provide for a better recognition.

Further, French-St. George in view of Suominen, do not specifically mention the method comprising:

(h) filtering the received speech input to remove noise residue due to the prompt.

However, Dudemaine teaches filtering the received speech input to remove noise residue due to the prompt (Dudemaine et al.'s Col. 5, lines 43-47). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of processing filtered speech input through the speech recognition system as taught by Dudemaine for French-St. George's system, as modified by Suominen because Dudemaine provides an audio recognition process for identifying predetermined sound in an unknown input audio signal (Col. 2, lines 60-63).

As per claim 22, French-St. George et al. in view of Suominen and Dudemaine teach the method of claim 21, wherein the predetermined time delay comprises a temporal pause occurring between indicating that the system is ready to receive speech input and listening for user speech input (In French-St. George's Fig. 10, "SPOKE TOO LATE" and "SPOKE TOO SOON" modules indicate that there is a short time delay for inputting speech after the prompt, also Col. 2, lines 43-47).

As per claim 23, French-St. George et al. in view of Suominen and Dudemaine teach the method of claim 21, wherein the starting step (f) begins 50-100ms before the prompt is complete (It would have been obvious to one having ordinary skill in the art at the time the invention was made to make a decision choice for an appropriate time frame for the earlier listening period).

As per claim 24, French-St. George et al. in view of Suominen and Dudemaine teach the method of claim 21, further comprising carrying out a plurality of iterations of steps (a) through (d) prior to steps (e) through (h) (French-St. George's Fig. 10 illustrate that the steps of prompting and re-prompting may occur up to 3 times).

As per claim 25, French-St. George et al. in view of Suominen and Dudemaine teach the method of claim 21, further including determining whether a user has exceeded an error count associated with the plurality of iterations of steps (a) through (d) (French-St. George's Fig. 10 illustrate that the steps of prompting and re-prompting may occur up to 3 times).

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie Lennox whose telephone number is (571) 270-1649. The examiner can normally be reached on Monday to Friday 9:30 am - 7 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NL

08/21/2007



**RICHEMOND DORVIL**  
SUPERVISORY PATENT EXAMINER